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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 24

Application Number: 09/185,248
Filing Date: November 03, 1998
Appellant(s): EIDSON ET AL.

Howard R. Boyle, Reg. No. 29,617
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 9, 2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is deficient because it is the detailed description of the invention. For appeal purposes, the summary of invention as provided by Amendment G, paper #20, has been entered and made of record.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The brief includes a statement that claims 1-4, 10-12, 16, 19, 21, 23 and 20 do not stand or fall together, but fails to present reasons in support thereof as required under 37 CFR 1.192(c)(7). MPEP § 1206.

The rejection of claims 1-4, 10-12, 16, 19, 21, 23 and 20 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,647,008	Farhangi et al	7-1997
5,706,335	Hinderks	1-1998
6,259,957	Alexander et al	7-2001

Bergher, L., et al, "Dolby AC-3 and MPEG=2 Audio Decoder IC with 6-Channels Output", IEEE Transactions on Consumer Electronics, Vol. 43, Issue 3 (August 1997), pp. 567-574.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4, 10-12, 16, 19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farhangi et al. (US Patent No. 5,647,008) in view of Bergher et al. ("Dolby AC-3™ and MPEG-2 Audio Decoder IC with 6-channels Output", IEEE Trans. on Consumer Electronics, August 1997), Hinderks (US Patent No. 5,706,335) and Alexander (US Patent No. 6,259,957).

Regarding claims 1, 11, 19, 21, and 23,

Receiving a first audio data stream in a first perceptually based format is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Obtaining a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67 and col. 4, lines 1-61.

Farhangi et al. discloses receiving compressed data streams and decoding the data streams into a raw format, however they do not specifically teach that the received data is

encoded in Dolby AC-3 or MPEG-2 format or that the raw format is linear pulse code modulated. Refer to Bergher et al. who teach an audio decoder that receives Dolby AC-3 and MPEG-2 data streams and decodes the data into pulse code modulated formats for use in US digital TV and HDTV, DVD, and general multimedia applications (Abstract; page 357; page 358).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the multimedia signal mixing system of Farhangi et al. to implement receiving Dolby AC-3 and MPEG-2 coded data and decode the data into a pulse code modulated format to allow for recovery of the original pulse code modulated data for use in general multimedia applications as suggested by Bergher et al., to allow for mixing the raw format signals with other raw format signals to produce combined output signals as suggested by Farhangi et al.

Combining a decoded first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61. Farhangi et al do not specifically teach that the digital mixer is a linear pulse code modulated mixer. Refer to Alexander et al who teach a digital data processing system and method, which allows for mixing of PCM data (col. 8, lines 26-30), for the purpose for meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound (col. 1, lines 51-53).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to allow for PCM mixing as taught by Alexander et al, for the purpose of meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound as suggested by Alexander et al.

Farhangi et al. teach transmitting the encoded combined audio data stream at col. 7, lines 18-21 for further processing or handling and they implement a CODEC on the receiving end of the system. However, they do not specifically teach that the combined encoded data is transmitted to a CODEC circuit. Refer to Hinderks who teaches transmitting coded signals through a transmission channel with limited bandwidth using a CODEC (col. 3, lines 33-40) for the purpose of allowing for two-way communication between multiple devices (col. 2, lines 33-37).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to transmit the combined encoded signals to a CODEC circuit to allow for two-way communication between multiple devices as suggested by Hinderks.

Regarding claims 2, 3 and 4,

Farhangi et al. teaches encoding the combined signals at Figure 2, element 296. However they do not specifically teach encoding the combined data in an AC-3 or MPEG format. Refer to Bergher et al. who teach that AC-3 and MPEG compress signals into streams that provide reduced transmission bandwidth or recording area without audibly degrading the perceived quality.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to encode the combined signals in either an AC-3 or MPEG format for the purpose of compressing the signal to achieve reduced transmission bandwidth or recording area without degrading the audio quality as taught by Bergher et al.

Regarding claim 10,

Combined audio data stream comprises a digital data stream is taught by Farhangi et al. at figure 2.

Regarding claims 12, 16 and 20,

Receive a first audio data stream in a first perceptually based format is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Decode the first audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Acquire a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67 and col. 4, lines 1-61.

Farhangi et al. discloses receiving compressed data streams and decoding the data streams into a raw format, however they do not specifically teach that the received data is encoded in Dolby AC-3 or MPEG-2 format or that the raw format is linear pulse code modulated. Refer to Bergher et al. who teach an audio decoder that receives Dolby AC-3 and MPEG-2 data streams and decodes the data into pulse code modulated formats for use in US digital TV and HDTV, DVD, and general multimedia applications (Abstract; page 357; page 358).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the multimedia signal mixing system of Farhangi et al. to implement receiving Dolby AC-3 and MPEG-2 coded data and decode the data into a pulse code modulated format to allow for recovery of the original pulse code modulated data for use in general multimedia applications as suggested by Bergher et al., to allow for mixing the raw format signals with other raw format signals to produce combined output signals as suggested by Farhangi et al.

Combining a decoded first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61.

Farhangi et al. teaches encoding the combined signals at Figure 2, element 296. However they do not specifically teach encoding the combined data in a perceptually based format. Refer to Bergher et al. who teach that perceptually based formats such as AC-3 and MPEG compress signals into stream that provides reduced transmission bandwidth or recording area without audibly degrading the perceived quality.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to encode the combined signals in either a perceptually based format for the purpose of compressing the signal to achieve reduced transmission bandwidth or recording area without degrading the audio quality as taught by Bergher et al.

Farhangi et al. teach transmitting the encoded combined audio data stream at col. 7, lines 18-21 for further processing or handling and they implement a CODEC on the receiving end of the system. However, they do not specifically teach that the combined encoded data is transmitted to a CODEC circuit. Refer to Hinderks who teaches transmitting coded signals through a transmission channel with limited bandwidth using a CODEC for the purpose of allowing for two-way communication between multiple devices (col. 2, lines 33-37).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to transmit the combined encoded signals to a CODEC circuit to allow for two-way communication between multiple devices as suggested by Hinderks.

(11) Response to Argument

At pages 6 and 7 of the Brief (Argument A), applicant argues that the limitations "decoding the first audio stream into a linear pulse code modulated format", "obtaining a second audio stream in a linear pulse code modulated format", and "combining the first decoded audio data stream with the second audio data stream, utilizing in part a linear pulse code modulated mixer, for receipt by a CODEC" are not disclosed or otherwise suggested in the cited references. Applicant also argues that none of the references include a discussion of any linear pulse code modulated signal or the combining of two such signals by a linear pulse code modulated mixer, and that none of the references disclose or suggest such a mixer.

The Examiner respectfully disagrees and argues that Farhangi et al teaches a method and apparatus for digital mixing of audio signals in multimedia platforms in which audio input signals are generated from various sources including microphone inputs, compact disc analog, line analog and formatted input signals such as compact disc digital, line digital and motion picture experts group standard (MPEG) that are deformatted to digitally extract the raw audio data (col. 3, lines 9-61), which reads on "receiving a first audio stream in a first perceptually based format" and "obtaining a second audio data stream." Farhangi et al discloses receiving compressed data streams and decoding or deformatting the data streams into a raw format. Farhangi et al do not specifically teach that the raw format is linear pulse code modulated format. However, using linear pulse code modulation as a raw format for digital data is extremely well known and is commonly used in the art of speech and audio signal processing.

Thus, in a similar field of endeavor, Bergher et al teaches the implementation of an audio decoder that received compressed data of either Dolby AC-3 or MPEG-2 format and decodes the

data into pulse code modulated format (which reads on "decoding the audio stream into a linear pulse code modulated format" and "obtaining a second audio stream in a linear pulse code modulated format").

Farhangi et al implements a digital mixer for combining the various digital signals (Figure 2, element 277, col. 4, line 41). Farhangi et al do not specifically teach that the digital mixer is a linear pulse code modulated mixer. In a similar field of endeavor, Alexander et al teach a digital data processing system and method, which allows for "mixing of PCM data" (col. 8, lines 26-30), which reads on "utilizing in part a linear pulse code modulated mixer".

Farhangi et al teaches encoding the combined signals at Figure 2, element 296 and teach transmitting the encoded combined audio data at col. 7, lines 18-21. Farhangi et al do not specifically teach that the combined encoded data is transmitted to a CODEC circuit. In a similar field of endeavor, Hinderks teaches transmitting coded signals through a transmission channel using a CODEC.

Therefore, the combination of the cited references of Farhangi et al, Bergher et al, Hinderks, and Alexander et al would provide for receiving audio data streams in a perceptually based format (as taught by Farhangi et al and Bergher et al), obtaining a second audio data stream in a raw format (as taught by Farhangi et al and Bergher et al), decoding the first audio data stream into a raw format (Farhangi et al and Bergher et al), such that the raw format is a pulse code modulated format (as suggested by Bergher et al), combining the two data streams using a mixer (as taught by Farhangi et al) such that the mixer allows for the mixing of pulse code modulated signals (as suggested by Alexander et al), and allowing for transmission of the

combined audio data streams (as taught by Farhangi et al) such that the transmission occurs via a CODEC (as suggested by Hinderks).

At pages 7 and 8 of the Brief (Argument B), applicant argues that the limitation "further comprising encoding the combined data stream into a second compressed format before receipt by the CODEC device" of claim 20 is not disclosed or otherwise suggested in any of the four cited references.

The Examiner disagrees and argues that Farhangi et al teaches encoding the combined signals at Figure 2, element 296 and teach transmitting the encoded combined audio data at col. 7, lines 18-21. Farhangi do not specifically teach encoding the combined data in a perceptually based format. The examiner argues that it is well known in the art of audio compression to compress data in a perceptually based format, and refers to Bergher et al who teach that perceptually based formats such as AC-3 and MPEG compress signals into stream that provides reduced transmission bandwidth or recording area without audibly degrading the perceived quality. Thus, it would be obvious to compress the combined signals in a perceptually based format to achieve the reduced transmission bandwidth or recording area without audibly degrading the perceived quality advantages, as suggested by Bergher et al. Farhangi et al teaches transmitting the encoded combined audio data at col. 7, lines 18-21. Farhangi et al do not specifically teach that the combined encoded data is transmitted to a CODEC circuit. In a similar field of endeavor, Hinderks teaches transmitting coded signals through a transmission channel using a CODEC.

Thus, the combination of the cited references of Farhangi et al, Bergher et al, Hinderks, and Alexander et al would provide for receiving audio data streams in a perceptually based

format (as taught by Farhangi et al and Bergher et al), obtaining a second audio data stream in a raw format (as taught by Farhangi et al and Bergher et al), decoding the first audio data stream into a raw format (Farhangi et al and Bergher et al), such that the raw format is a pulse code modulated format (as suggested by Bergher et al), combining the two data streams using a mixer (as taught by Farhangi et al) such that the mixer allows for the mixing of pulse code modulated signals (as suggested by Alexander et al), encoding the combined data streams (as taught by Farhangi et al) to exploit the advantages of perceptually based formats (as suggested by Bergher et al), and allowing for transmission of the combined audio data streams (as taught by Farhangi et al) such that the transmission occurs via a CODEC (as suggested by Hinderks).

At page 8, applicant further argues that no reference discloses combining two LPCM signals, combining PCM signals using in part a PCM mixer, and a mixed LPCM signal is compressed before it goes into a CODEC.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992). In this case, Bergher et al teaches decoding perceptually based format signals into raw formats such as pulse code modulated for use in US digital TV, HDTV, DVD, and general multimedia applications (Abstract, page 357-358) and also teaches that signals encoded in a perceptually based format provides reduced transmission bandwidth or recording area without audibly degrading the perceived quality (page 567, column 1, lines 3-6).

Alexander et al teaches a system that allows for the mixing of PCM data for the purpose of meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound (col. 1, lines 51-53).

Hinderks teaches transmitting coded signals through a transmission channel using a CODEC for the purpose of allowing for two-way communication between multiple devices (col. 2, lines 33-37).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Examiner

AAA
June 13, 2002

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